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Forest Recreation, Education and Special Population of Children

by

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### ABSTRACT

This paper contains a review of the involvement the U. S. Forest Service has had in providing recreational and educational opportunities for exceptional children. The play needs of children are briefly discussed. An introductory survey of the disorders affecting children is provided and on this basis, a plan of action is designed to improve forest opportunities for exceptional children. Existing facilities on the Sandia Ranger District suitable for use are reviewed; existing facilities requiring some modification are discussed; and new facilities and methods of informing people of special opportunities are described.

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### THE IDEA

"The handicapped child has a right to grow up in a world which does not set him apart, which looks at him not with scorn or pity or ridicule but which welcomes him, exactly as it welcomes every child, which offers him identical privileges and identical responsibilities."

(From the White House Conference on  
Child Health and Protection, Committee  
on Physically and Mentally Handicapped,  
The Handicapped Child).



## INTRODUCTION

### Statement of Purpose

This paper was prepared in an effort to improve the opportunities for using the Sandia Ranger District of the Cibola National Forest by exceptional children. The purpose of this report is to present a review of the special populations of children, their specific needs, and to discuss some opportunities we have to make the national forest more available to them.

This paper will be useful to the citizens of the area surrounding Bernalillo and Albuquerque, New Mexico. It will also serve as an introduction to the needs of exceptional children for recreation planners in other places who may want to pursue a similar course of action.

### The Forest Service and Recreation for Exceptional Children

The national forests were established for the benefit of all the people. Benefits can be of many kinds and the inference was never that all the people can use all the national forest area. For all of us, the accessibility to the forest varies from extremely easy to nonexistent. For exceptional children, it is most often nonexistent.

National forests continue to be used primarily for wildland or less developed uses. Traditionally, cities and counties have met the need for special facilities for special populations of people.

This division of duties will probably continue, but where opportunities exist, changes in the way of doing things can make many national forest areas more usable by special populations within the constraints imposed by tradition, policy, regulation and funding.

National forests offer land and open space significantly different from city parks, school play grounds and indoor activity centers. They offer an immense variety of lands which can be used to improve the physical and mental wellbeing of exceptional children.

### Policy

This report contains recommendations which generally conform to congressional intent, public need and Forest Service policy. There are many activities in which handicapped children may be involved. The intent here is to discuss those needs and activities which are compatible with the outdoor environment of a national forest.

Time and money constraints require that some activities be left to city governments or state and county agencies. Examples of these activities include developed swimming pools and areas, indoor crafts, and supervised team sports.

The emphasis in this paper is on activities which are outdoor associated such as hiking, nature study, snowplay, archery, day camping, overnite camping, fishing and winter sports. It is the intent of the Forest Service to provide areas which can be used by all citizens. Eliminating physical barriers so the handicapped can participate with the other member of our population is necessary.

### Why Do Anything?

We recognize and provide for the needs of people because the public lands are their property. Traditionally we have provided for the needs of most people through campgrounds, ski areas, trails, and visitor centers designed for the average adult or child. Besides the fact that exceptional children are also members of the public deserving of attention and help there are other reasons to give them the special help they need.

Bryant J. Cratly (1969) identified the following reasons for encouraging the handicapped youngster to engage in games:

1. Game participation fulfills social objectives. If the handicapped child finds that he can do something in a social context in which he and others find mutual pleasure, he should develop socially.
2. The motivating nature of games may encourage him to extend himself physically, thus improving some of his movement capacities.
3. Watching the movement of other children and objects may supply visual perceptual training which the child may not have.

His work is in reference to games but each reason is appropriate for outdoor activities. Someday these children will have an opportunity to participate in decision processes concerning their world. If we can help them to develop socially and physically in an outdoor setting, they will have an appreciation for the environment which will be critical to their active participation in managing their future.

A closely associated concern deals with the way we attempt to provide recreational opportunities for exceptional children. The emphasis in education today is in mainstreaming the disadvantaged. Reynolds and Rosen (1976) describe this as a social process of deinstitutionalization where the needs of exceptional persons are provided for in the the community and not in a hospital, prison or other institution. Mainstreaming fits very well with Forest Service policy as it regards the provision of facilities for all citizens to use together.

Reynolds and Rosen describe mainstreaming as the education of children with handicaps or learning problems within the environment provided for all other children. This same philosophy can be carried from the classroom to outdoor recreation opportunities. Recreation becomes an extension of the social setting in the classroom and the home.



## Magnitude of the Problem

Vinton and Hawkins (1977) emphasize that fifteen percent of the nations children and youth have some form of handicap. In 1977, there were an estimated 35 million handicapped citizens in the United States. (Outdoor Recreation Action, 1977). The latest report by the National Advisory Committee on the Handicapped in 1976 states that of this total, 8 million are children who are classified as handicapped or disabled. Over 6 million of these children live in urban areas.

In the Bernalillo County School System, there were approximately 6500 exceptional children (except gifted) enrolled in December 1980. They were categorized as follows:

### (Bernalillo County 1980)

Educable mentally retarded	.	.	.	.	.	.	317
Trainable mentally retarded	.	.	.	.	.	.	163
Hard of hearing	.	.	.	.	.	.	84
Deaf	.	.	.	.	.	.	48
Communication disorders	.	.	.	.	.	.	1396
Blind	.	.	.	.	.	.	1
Partially sighted	.	.	.	.	.	.	115
Behavior disorders	.	.	.	.	.	.	1052
Physical impairments	.	.	.	.	.	.	112
Other health impairments	.	.	.	.	.	.	11
Specific learning disability	.	.	.	.	.	.	2964
Deaf and blind	.	.	.	.	.	.	6
Severe multiple disability	.	.	.	.	.	.	294

In the Sandoval County School System, there were approximately 289 exceptional children (except gifted) enrolled in December 1980. They were categorized as follows:

### (Sandoval County 1980)

Educable mentally retarded	.	.	.	.	.	.	13
Trainable mentally retarded	.	.	.	.	.	.	10
Hard of hearing	.	.	.	.	.	.	4
Communication disorders	.	.	.	.	.	.	35
Behavioral disorders	.	.	.	.	.	.	19
Physical impairments	.	.	.	.	.	.	1
Mentally handicapped	.	.	.	.	.	.	24
Learning disability	.	.	.	.	.	.	182
Visually impaired	.	.	.	.	.	.	1

## LITERATURE REVIEW

Westfornt services in Fort Collins were used for the initial review. The search resulted in a list of 95 citations from various sources primarily from the ERIC Index (Educational Resources Information Center) and the Exceptional Child Educational Resources Index.

The card catalogue and information specialists at the Zimmerman Library and the Tireman Learning Materials Library of the University of New Mexico, Albuquerque, were also used. Many textbooks and publications not listed in the Westfornet search were identified and subsequently used as reference material.

A review of materials in the Albuquerque Public Library yielded 30 possible references.

#### METHODOLOGY

The steps in preparing this paper were as follows:

1. Review the literature to gain an understanding of why children might want to visit a wildland environment.
2. Review the literature to obtain an understanding and appreciation of the disorders affecting exceptional children and the limits on their activities imposed by these disabilities.
3. Review the literature to determine what kinds of activities, facilities and opportunities are being provided to exceptional children in other parts of the world.
4. Study the Sandia Ranger District to identify
  - a. Facilities or activities currently available to exceptional children.
  - b. Facilities needing some modification to make them available to exceptional children.
5. List the activities, facilities and opportunities which might be feasible to develop or provide.
6. List and discuss a specific group of projects to be undertaken immediately and over the long range.

#### Parameters

I have chosen to identify children as being those people who are of or just below primary and secondary school age. The class includes the ages from about three up to about 17 years.

I have tried to concentrate upon facilities, activities and opportunities more or less compatible with a wildland environment. However, I have not excluded any simply because it may be contrary to current policy or because it hasn't been done before. I have included information on both recreation and education. There seems to be no reasonable division between the two activities when either is conducted in a wildland or outdoor environment.

## THE NEEDS AND INTERESTS OF CHILDREN

Basic to an understanding of the ways a national forest can be used by special children is an understanding of the needs and interest of children. We must also understand the special limitations children have as a result of the many handicaps they suffer.

### Play

For any child, play is very important for full and proper development. Children acquire and master new skills through play. Since handicapped or exceptional children have serious difficulty meeting challenges, it is vital to encourage their play and provide them with the proper facilities.

Many kinds of play must of necessity be done indoors but most can occur either indoors or outdoors. Our intent is to make the national forest available to children in their play or education so they can learn to appreciate their world and can meet the challenges they must face.

### The Nature of Play

Children everywhere play, or they desire to. Play is fun and pleasurable. Jeffree (1977), emphasises that the essence of play is that it is initiated by the child and is not forced on him. The child chooses what to play and how to play. Playing for children is its own reward. Jeffree states that "In play, a child is free from restraints and he can please himself." By playing, children grow to adulthood.

For the exceptional child, some forms of playing are not possible because of restraints inherent in the disability (for example being deaf) or because we haven't removed restraints inherent in the outdoor play environment (for example, rough paths.)

### The Diversity of Play

In providing play or recreation opportunities for exceptional children, the opportunities must be designed with the kind of play in mind. Jeffree admits it may be somewhat artificial to divide play into various kinds because most overlap. But his division into the following six groups does help us to understand and design play opportunities for exceptional children.

1. Exploratory Play
2. Energetic Play
3. Skillful Play
4. Social Play
5. Imaginative Play
6. Problem Solving Play (in this book in typical British language it's called "puzzel-it-out Play")



National Forest and other undeveloped areas may be used to provide opportunities in all of these kinds of play. Some examples follow:

1. Exploratory Play - A child's natural curiosity takes them to new places and new situations. Some games to play are:

Find it or Hide it: hide things or find things described by a parent or teacher.

Chase me or Catch me: turn it into hiking or jogging; create crawling areas of sand or loam with hazards removed.

2. Energetic Play - Activities requiring lots of energy such as, climbing, jumping, or baseball. Some games for the severely mobility impaired are:

Stretch and roll: study soil and leaves while the child is exercising.

Swinging: Adults can swing children or they can swing in ropes.

Different surfaces: Explore a variety of surfaces such as soil, rock, leaves and woody material.

Parallel bars: Install at various heights by a trail and encourage children to use them.

3. Skillful Play - Games requiring skillful use of hand and eye are important. In nature hikes, encourage children to "pick up a rock;" encourage walking on difficult surfaces; select or establish art or drawing sites.
4. Social Play - A child must learn to get along with other people; provide social interactions during group outings.
5. Imaginative Play - This is the world of make believe. Children can pretend and participate in story time with Rangers around campfires.
6. Problem Solving Play - Children can learn to solve problems in the outdoors. Some possible activities are map reading, orienteering and making collections of things such as leaves and rocks.

#### A Survey of Disorders Affecting Children

Libraries have vast collections of works and journals dealing with the problems children suffer and there is no reason to review this vast accumulation of knowledge. There is good reason though to briefly summarize the various conditions which affect children. Knowing the problems will help us appreciate the situations children find themselves in and this will help us design a better facility for our visitors.

The various disabilities suffered by children are well covered in Goldstein (1978). When reviewing the kinds of disabilities, it is important to keep in mind the concept that every disability is a continuum of severity. For example, children who are visually impaired vary from those totally and permanently blind on one end of the scale to children at the other extreme who can see stripes, colors, and movements.

Mobility-impaired children may be completely immobile or may get around quite well with crutches or in a wheelchair. Some other disabilities have very complex continuums of severity.

In the following paragraphs, the conditions affecting children are briefly discussed.

### AUTISM

Autism is considered to be a psychotic condition characterized by severe withdrawal from the environment. Another explanation is that it occurs in a person who cannot separate himself from his environment and becomes a thing in the environment. Autism may be the result of early maternal deprivation.

### CEREBRAL PALSY

Cerebral Palsy is a condition caused by damage to the brain, usually at birth. An estimated 10,000 children with Cerebral Palsy were born every year. These youngsters range in behavioral manifestation from almost imperceptible to gross motor problems. It is characterized by paralysis, weakness, uncoordination and other abnormalities of motor function. There are three main types.

- a. Spastic where the individual moves stiffly and with difficulty
- b. Athetoid, where the individual has involuntary and uncontrolled movements.
- c. Ataxia, where the sense of balance and depth perception are disturbed.

### MENTAL RETARDATION

Mental retardation is a condition where the brain and certain body parts do not develop properly or completely. Children with this condition may have learning disabilities and may have motor control problems or seizures.

### ABUSED AND NEGLECTED CHILDREN

This group of children may begin life quite normally. But mental or physical abuse creates severe social adjustment problems in the child. Neglect is a form of both mental and physical abuse. In both cases, the child may be physically tortured or injured. Improper diet causes below average mental and physical development.

## HEARING IMPAIRMENT

Improper development or damage to the ear can cause various levels of loss of hearing ranging from the inability to detect certain notes to total deafness. Some forms of damage to the brain also cause hearing loss. Some children hear well but apparently are not able to sort out and meaningfully decipher the sounds they receive.

## VISUAL IMPAIRMENT

Improper development or damage to the eyes and some forms of brain damage can cause the loss of sight. The loss may range from being color blind or having "tunnel vision" to total blindness. Some children are unable to understand the symbols used in writing and are therefore unable to read.

## MOBILITY IMPAIRMENT

Mobility-impaired children have lost part or all of their use of certain limbs or body parts. Disease or amputation can leave children immobile or confined to wheelchairs. They may use walkers or crutches. Arthritis can impair their ability to make full use of their bodies. Cystic fibrosis, asthma and tuberculosis can all make breathing extremely difficult for otherwise fully-mobile children, especially at high altitudes.

## SPEECH IMPAIRMENT

These children are unable to communicate properly by voice. The impairment may range from stuttering to total speech loss. They must usually communicate by sign language or in writing.

## LEARNING DISABILITIES

Some children are handicapped by a poor ability to learn. They have problems paying attention, learning to read, telling time, writing properly, and grasping concepts like "behind" or "many." These children are generally called underachievers. This term has come to mean:

1. that the child is not retarded;
2. that the learning or behavior problems are not caused by the more obvious physical handicaps;
3. that emotional disturbance is not a primary factor;
4. that cultural deprivation and environmental disadvantages are not major contributing elements. (Rowan 1977)

## HYPERKINESIS

Children are also called hyperactive and are exemplified by being very active at inappropriate times. The condition can be caused by fluorescent lights and chemicals in our environment. Hyperactive children frequently have difficulty learning because they can't keep their mind on the subject. They may also physically hurt themselves and others.



## EPILEPSY

Epilepsy is a combination of conditions in which body functions are not properly controlled by electrochemical energy impulses from the brain. Anyone can be affected at any time. Automobile accidents are a major cause of the condition. It is also caused by birth trauma, high fever, infectious diseases and drug abuse. It can be controlled medically.

## EMOTIONAL DISTURBANCES

Children are subject to many pressures which lead them to depression, fear, anger, anxiety, and paranoia. These conditions can interfere with their ability to learn and to develop socially.

## MULTIPLE HANDICAPPED CHILDREN

These children have various combinations of all the various handicaps.

### Handicapped Children's Development in an Outdoor, Natural Environment

My review of the literature indicates that more and more educators are beginning to emphasize that handicapped children may be significantly helped by being exposed to an outdoor environment. Hawkins (1975) has also observed this trend and states that limited research indicates that a natural environment can provide an excellent foundation for the physical, emotional, intellectual and social development of exceptional children. Jeffree's (1977) review of the nature of play certainly lends support to this belief. I would suggest that the outdoor environment is not only better for the child but it is also better for the teacher and the climate for learning is improved because both "feel" better there. My literature review revealed no studies about the part improved teacher or parent attitude might have upon the ability of a child to enjoy, play, and learn better in an outdoor area such as a national forest.

Hawkins also mentions the detrimental effects of isolation, permanent hospitalization and institutionalization upon the handicapped child. It follows that parents and teachers would do well to use the available national forest areas for study and recreation.

### Handicapping Conditions

Geddes (1974) presents seven groups of handicapping conditions with which one must deal in the provision of opportunities for recreation.

1. Subaverage intellectual functioning at a mild-to-moderate degree (educable or trainable mentally retarded)
2. Subaverage intellectual functioning at a severe degree (severely or profoundly mentally retarded)
3. Learning Problems (defined as poor development in one or more of the process of speech, language, reading, writing, arithmetic or other school subjects, which are caused by such factors as perceptual problems or behavioral disturbances).

4. Visual Problems (blind or partially sighted)
5. Hearing Problems (deaf or hard-of-hearing)
6. Orthopedic Problems (impairments affecting the use of muscles, bones and/or joints).
7. Emotional Problems (social-emotional behavioral patterns or characteristics that are either extremes or deviate from the usual range of human growth and development.)

It is important that individuals should not be individually categorized or labled as being handicapped but the groups of limiting conditions are of value in designing opportunities for a broad range of the population. The personalization of experiences must be left to teachers, parents, friends or Forest Service employees who use the facilities made available. Efficient planning requires the grouping of disabilities even through it verges on categorization.

#### Some Assumptions About the Barriers to Use by Exceptional Children

The opportunity for an exceptional child to use an area safely depends upon the nature of the area, the amount and quality of the supervision available and the nature of the childs disability.

Over the short term, the nature of recreation areas will not change. Design problems require funding and usually long periods of time to correct. Many design barriers may continue to exist for many years.

Supervision available to children appears to be critical. Any child with any disability can use almost any place for recreation if proper medical support and full time supervision are provided. This variable should be kept in mind while the following chart is read. Therefore, it appears that the primary barrier to use is the nature of the childs disability. In reviewing the disabilities suffered by children, it appears that each separate disability does not impose a peculiar barrier. That is, the disabilities may be grouped according to the limits created by the disability.

Recommending areas suitable for use by exceptional children is difficult at best. It is simplified somewhat if we group the limiting factors of each condition into the following categories: deaf, partially deaf, blind, partially sighted, asthmatics and other respiratory problems, and mobility impaired. Information on area hazards and facilities must also be co sidered.

The chart on the following page is my attempt at displaying site conditions so that areas may be selected for children suffering specific disorders. I have outlined information about mobility provisions so that visitors can decide whether or not to go into certain areas. The chart also shows my attempt at recommending sites for children with certain disorders grouped in the classification in the previous paragraph.



NAME OF AREA OR SITE	SPECIAL HAZARDS										RECOMMENDED SUPERVISION			SPECIAL FEATURES			RELATIVELY SUITABLE			MOBILITY PROVISIONS		
	TRAFFIC	CLIFFS/EXPOSED EDGES	POISON IVY	SHARP LITTER	FALLING ROCK	VERY LITTLE	MODERATE	CLOSE & CONSTANT	BRAILLE	RECORDERS OR MOVIES	BROCHURES	EDUCATION OPPORTUNITY	DEAF	PARTIALLY DEAF	BLIND	PARTIALLY SIGHTED	ASTHMATICS	RESTROOM ACCESSIBLE	PATHS	TABLES	ELEVATOR	EASE OF AUTO ACCESS
LAS HUERTAS CREEK	*		*	*	*			*				*	*	*	*	*	*					:POOR:
LAS HUERTAS PICNIC GROUND	*		*				*				*	*	*	*	*	*		*	*			:POOR:
CAPULIN SNOWPLAY & PICNICGROUND						*						*	*	*	*	*		*		*		:GOOD:
CREST OBSERVATION AREA	*	*			*			*			*	*	*	*	*	*		*	*			:EXCL:
DOC LONG & SULPHUR CANYON	*			*				*				*	*	*	*	*	*	*		*		:EXCL:
CIENIGA NATURE TRAIL							*		*		*	*	*	*	*	*	*	*	*	*		:EXCL:
CIENEGA PICNICGROUND	*			*			*					*	*	*	*	*	*	*	*	*		:EXCL:
TRAM BASE	*						*					*	*	*	*	*	*		*		*	:EXCL:
TRAM TOP & VIS FACILITY		*			*			*		*	*	*	*	*	*	*						:NONE:
HI FINANCE RESTAURANT		*						*				*	*	*	*	*						:NONE:
TIJERAS RANGER STATION	*	*					*			*	*	*	*	*	*	*	*	*	*			:EXCL:
TIJERAS RUINS (Adjacent to Ranger St.)		*					*				*	*	*	*	*	*	*					:EXCL:
CEDRO LOOKOUT								*			*	*	*	*	*	*						:POOR:
TUNNEL CANYON PICNIC AREA		*		*			*					*	*	*	*	*	*	*				:EXCL:
PINE FLAT	*			*			*					*	*	*	*	*	*	*		*		:EXCL:
BAK FLAT				*			*					*	*	*	*	*	*	*		*		:EXCL:
CAROLINO CANYON						*					*	*	*	*	*	*	*	*	*	*		:EXCL:
JUAN TABO	*			*			*					*	*	*	*	*	*	*	*	*		:EXCL:
LA CUEVA	*			*			*					*	*	*	*	*	*	*	*	*		:EXCL:

## EXISTING FACILITIES OR ACTIVITIES TO BE MODIFIED

There are four primary areas where some improvement should be made to improve the accessibility for exceptional children.

### 1. Sandia Ranger Station

The primary problem here is access for mobility-impaired children. The office does have a handicapped parking space designated and a ramp provides easy access to the main floor of the office. However, the restrooms on the main floor must be rebuilt to permit access to mobility-impaired children. Special programs are given in the conference room which is in the basement. Children with mobility impairments must be assisted up and down stairs. The restrooms in the basement cannot be rebuilt to any standard to provide access to those confined to wheelchairs. The water fountain is inaccessible to all children not tall enough to reach it.

### 2. Upper Tramway Terminal and High Finance Restaurant

The primary problem in this area is access for mobility-impaired children. There are no restrooms at the upper tramway terminal and the boardwalk to the restaurant contains many steps. Because of frequent winter icing conditions, an inclined ramp is not feasible. The icy surface would prove disastrous to everyone. The permittee has discussed the obvious need for restroom facilities at the upper tramway terminal and is planning to provide these during the next redesign phase.

A possible alternative to the inclined ramp is an electric elevator. Walkways in the area would have to be redesigned and this could be done. Restroom facilities in the restaurant pose a problem which will require major design changes. These will be considered if and when the facility is altered.

The permittee has plans for an addition to the restaurant which will accommodate a day lodge for the ski area, a bar, and a Forest Service Visitor Information facility. The final plans will be approved after the design makes the facility fully accessible and usable by all children.

### 3. La Cueva and Juan Tabo Picnic Areas

These facilities, located at lower elevations on the west side of the mountain, were constructed years ago and access was not considered for any but able-bodied people. During 1981, many sites were reconstructed and several picnic units and some toilets are accessible.



#### 4. Snowshoe Hikes

The Naturalist on the Sandia District has conducted guided, interpretative, snowshoe hikes for many winters. This program will continue. Groups of people with exceptional children will be encouraged to make special arrangements for hikes on the snow geared to their specific needs. The Naturalist can conduct the hike for all exceptional children including those with mobility impairments. Adults sponsoring the children will be encouraged to use sleds or other devices. The main emphasis in this activity will be to improve the information flow from the Forest Service to potential visitors.

### NEW FACILITIES AND ACTIVITIES

The literature review left no doubt about one point. The exceptional child should not be treated in a class apart from other children. All they require is consideration so that activities and facilities available to other children are available to them. Any new activity or facility should be built for groups of adults, children and exceptional children.

In the information program on the Sandia Ranger District, there is an obvious gap in the process by which we provide information about facilities and activities available to exceptional children.

#### 1. Outdoor Education Skill Areas

- A. Literature. Ralph R. Dykstra (1973) in Outdoor Education for the Handicapped discusses many suitable activities in which handicapped children can participate. A review of this document indicates that the many activities discussed are compatible with a national forest setting. Participants are encouraged to decorate their picnic table with moss, old wood and rocks as a means of stressing conservation of plants. Children may make casts of animal tracks, study leaf design, practice some survival crafts, and collect leaves.

They may be introduced to trees, shrubs and vegetation, water soil, life and decay. They may observe shadows, animal life and weather. They can learn to use a compass.

- B. Suitable Areas Usable Now (these are areas normally used lightly during school days)
- a. Tunnel Springs: Accessible by small bus, car and truck. Offers water, wildlife, riparian vegetation and nearby dry rocky grounds; toilets available; about 45 minutes from Albuquerque, 20 minutes from Placitas; last mile is a gravel road.
  - b. Cienega Springs: Accessible by large school bus, car and truck. Picnic and toilet facilities available; offers water, riparian vegetation, wildlife signs, and ponderosa pine type forest; about 30 minutes from eastern city limits of Albuquerque; paved interior roads.

- c. Cole Spring : Accessible by small bus, car and truck except for very wet weather; picnic and toilet facilities available; offers water, some riparian vegetation, pine forests; about 1 hour from eastern Albuquerque city limits; last 4 miles are gravel.
- d. Doc Long - Sulphur Areas: Accessible by bus and all other vehicles; paved highway to area, picnic and toilet facilities available; offers water except in very dry periods, riparian vegetation and open pine forests.
- e. Sandia Crest - Accessible by all vehicles except large buses; toilet facilities available, picnicing encouraged in nearby forest, fall and spring winter snows deep and access may be blocked; offers rocks, soil and thick forests. Excellent views of the Rio Grande valley.

C. Method of Making Available for Use

Prepare a letter-size handout describing areas and possible use. Refer teachers to Dykstra (1973) for hundreds of suitable activities. Send these brochures to all public schools with cover letter inviting their visit. Offer help through special Ranger programs. Have brochures available in offices and visitor center for people to use.

D. See also:

- a. Dykstra (1973) lists hundreds of teacher resources and publications.
- b. Muscatine-Scott (1971)

2. A Touch Trail or Area

A. Literature

The use of interpretive devices to appeal to the sense of touch has been minor. Visually-impaired children and some with learning disabilities depend upon the sense of touch to a great extent. It is apparent that there are many opportunities to interpret our environment through the sense of touch for all visitors.

B. Suitable Areas

Any interpretive trail can be modified to include interpretative devices using the sense of touch. There are scattered possibilities where touch museums in the outdoors might be developed but at this time, none are planned.

C. Methods of Making Available For Use

The Cienega nature for the handicapped will be reviewed and as far as possible, touch will be emphasized.

Refer also to the Tijeras Ruin Interpretive Trail Proposal following this discussion.

- D. See also: Nicheksbury (1979)  
Muscatine-Scott (1971)  
U. S. National Park Service (1978)  
Yellowstone National Park (1972)  
Schwartz (1976)

### 3. Guide to Fragrant Plants

#### A. Literature

Many references point out the fact that people with a full range of sensory perceptions are not often encouraged to use their sense of smell.

#### B. Suitable Areas

The most suitable areas for emphasizing the use of the sense of smell are near permanent waters. Accessible areas are found at Las Huertas Creek, Tunnel Springs, Cienega Canyon and Capulin Springs.

#### C. Methods of Making Available For Use

The concept of a trail or area emphasizing fragrant plants will be considered as planning for the ranger district continues.

Immediate action could be taken to develop a guide to plants in a certain area suitable for use by exceptional children.

- D. See also: Goodman (1977)  
Yellowstone National Park (1972)

### 4. Tijeras Ruin Interpretive Trail

The ruins of an important archeological site are located at the Sandia Ranger District administrative complex. Plans are being developed to provide access and interpretation of the ruins.

The development will provide access for mobility-impaired children. Interpretation will be designed to emphasize touch, sound, smell and visual characteristics. A brochure will be designed and we may possibly have portable tape recorders with the interpretative message on tape.

The trail will be usable for either study or for recreation. Its availability will be announced through news media, mailings of brochures to schools and contacts with public welfare agencies.



## 5. Brochures and Information

The most immediate need seems to be to improve the availability of information. This information can improve the opportunities for study and recreation by exceptional children and their families.

Questions by all visitors concentrate on places to go, facilities which are accessible, and activities which they may engage in. Considering the kinds of information exceptional children need along with an understanding of their social, physical and psychological needs, the following brochures will be prepared:

### 1. Recreation Opportunity Guide for Exceptional Children Picnicing and General Recreation

#### A. Format

Brochure to be printed or copied two sides on standard size paper, black on white

#### B. Content

Safety: briefly discuss hazards in undeveloped areas

Facilities: list and describe

Map: schematically show entire district with suitable facilities indicated

#### C. Availability of Brochure

Mail copies to public schools, health services and news media. Supplies will be maintained at the visitor center and the ranger station

### 2. Recreation Opportunity Guide for Exceptional Children Winter Sports and Snow Play Activities

#### A. Format

Brochure to be printed or copied two sides on standard size paper, black on blue

#### B. Content

Safety: Discuss winter safety considerations; include a wind chill chart

Special programs: Mention that special programs can be arranged in the field or on the mountain. List and discuss activities which exceptional children can engage in.



C. Availability of Brochure

Mail copies to public school, health services and news media. Supplies will be maintained at the ranger station, tramway and ski area.

3. Educational Opportunity Guide for the Teachers of Exceptional Children

A. Format

Brochure to be printed or copied two sides on standard size paper, black on green

B. Content

Background: brief reference to the value of educating children in an outdoor environment

Safety: discuss general safety considerations

Facilities: List and describe some which are accessible. Briefly describe characteristics.

SUMMARY

Exceptional children can use national forest areas to a greater extent than they have. Parents, teachers, friends and public health and welfare services need only encouragement and good information. With this, they can plan pleasant outings which will help handicapped children develop physically, emotionally, intellectually and socially.

Exceptional children desire to be treated as other children are. They want to be given the same challenges and opportunities. They want to have family outings and to participate with their nonhandicapped peers.

National forests can provide a place for the many kinds of play and for the study of nature and conservations. Many facilities are presently not available for use by exceptional children. Some must be altered so that they can become available.

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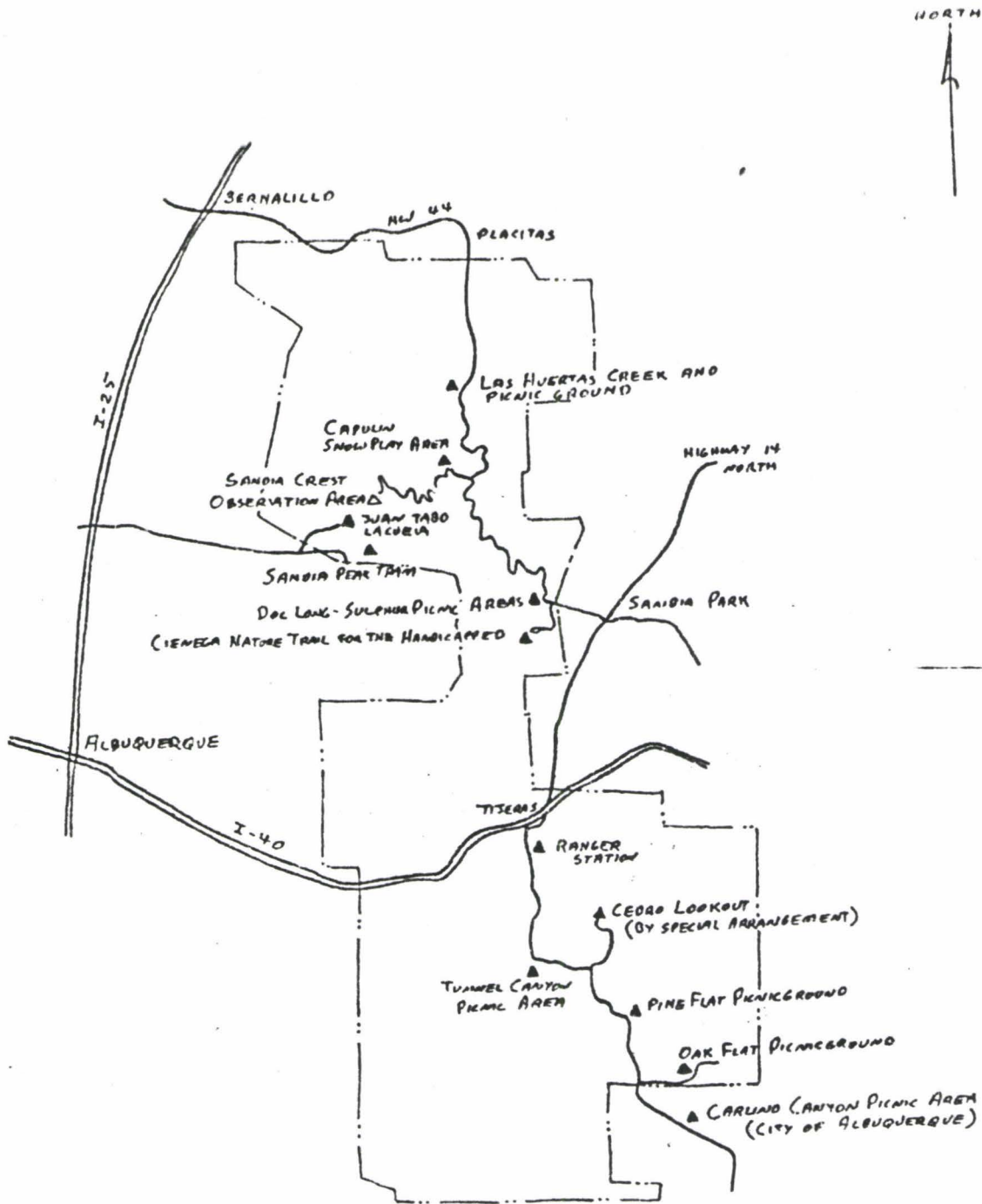
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## APPENDIX ONE

### A List of Many Possible Projects

1. Paved trail or boardwalk in the mixed conifer cover type
2. Guide to the Crest Trail for visually impaired young adults using seeing eye dogs
3. A day camp for the handicapped (including special sand table, learning centers and facilities for all)
4. Fishing facilities accessible to and usable by the handicapped
5. Special tours for exceptional children to the Albuquerque Air Tanker Base
6. Guidelines for handicapped use of wilderness hiking trails: where, assistance, limitations, trail profiles, etc.
7. Create a "challenge your skills area" using wood and natural features to create a wildland playground for all children. Design with skill limits of exceptional children in mind. \_\_\_\_\_
8. Guide to horseback riding opportunities in the Sandia Mountains
9. Bird listening areas
10. Winter special olympics at Sandia Peak
11. An organization of volunteers available as needed to guide or help groups of exceptional children in using the National Forest
12. Drawing or touching areas. Provide trail or roadside pullouts for visitor or student use.



# MAP OF SUITABLE PLACES FOR EXCEPTIONAL CHILDREN

CIBOLA NATIONAL FOREST  
SANDIA RANGER DISTRICT  
ALBUQUERQUE, NEW MEXICO

APX 4 MILES